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Title:	SAIL Overview for Gunnison County Board of Commissioners
Author(s):	Powers, Heath Hamilton
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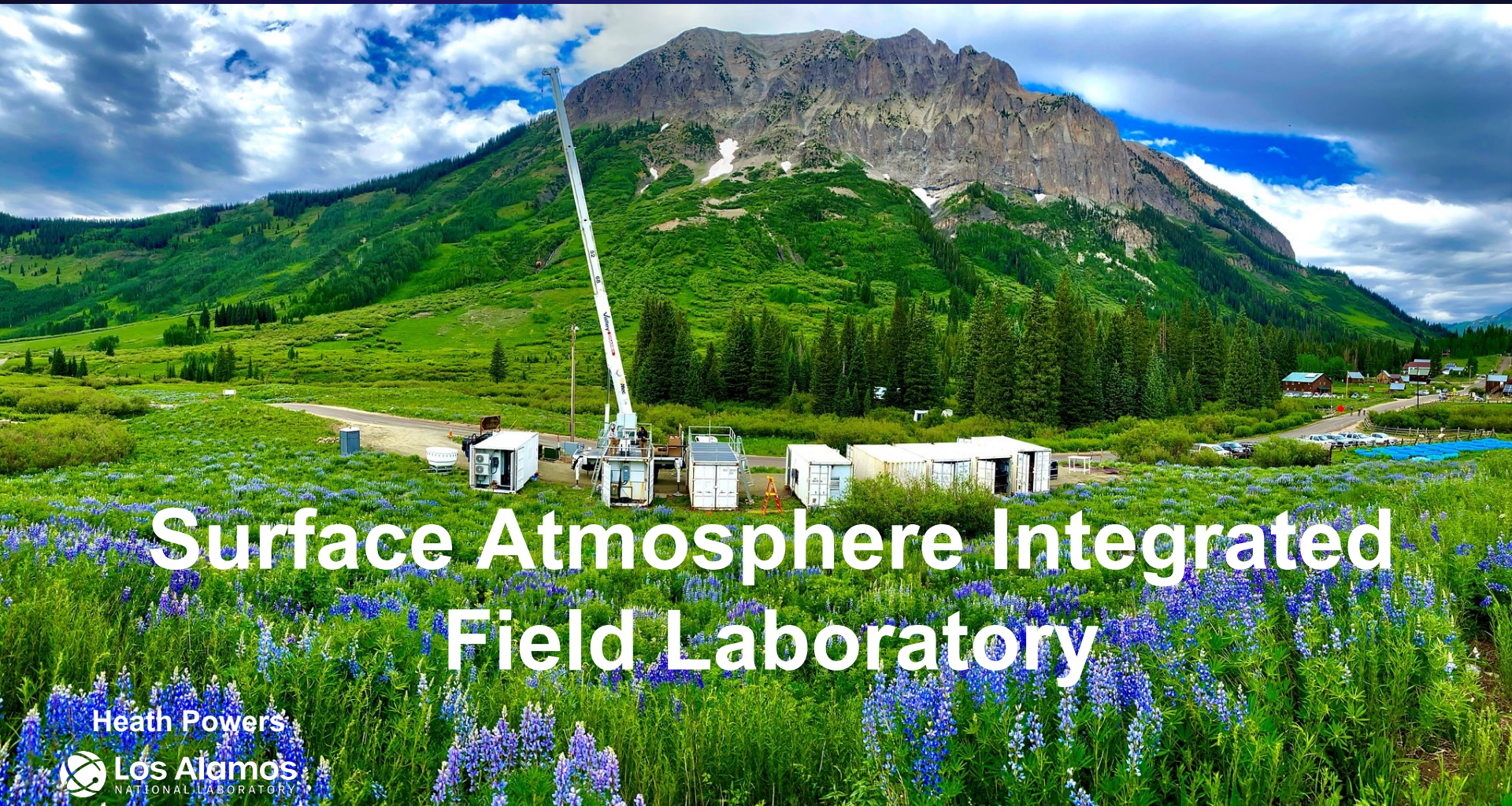
SAIL

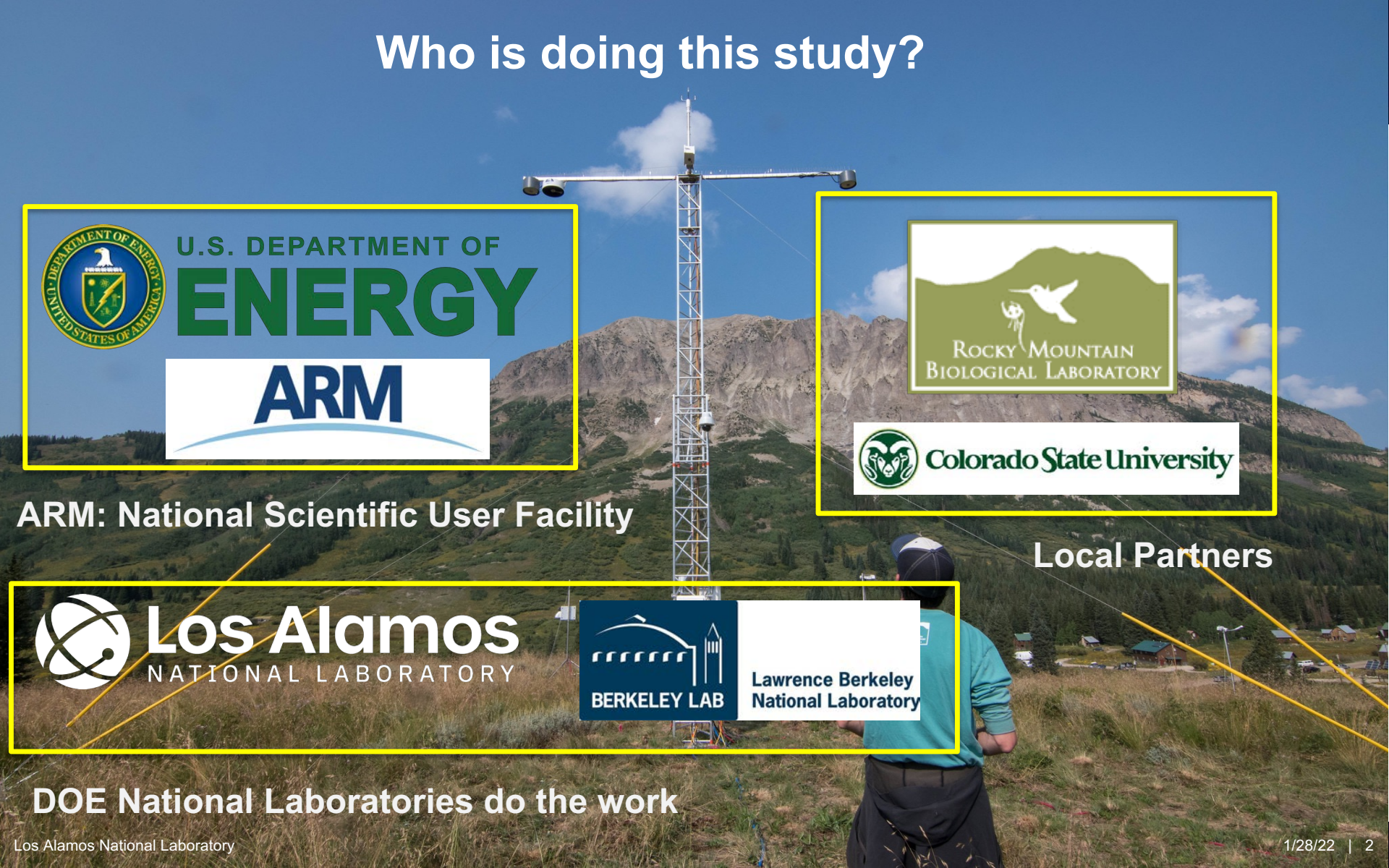


Surface Atmosphere Integrated Field Laboratory

Heath Powers

Los Alamos NATIONAL LABORATORY

Who is doing this study?



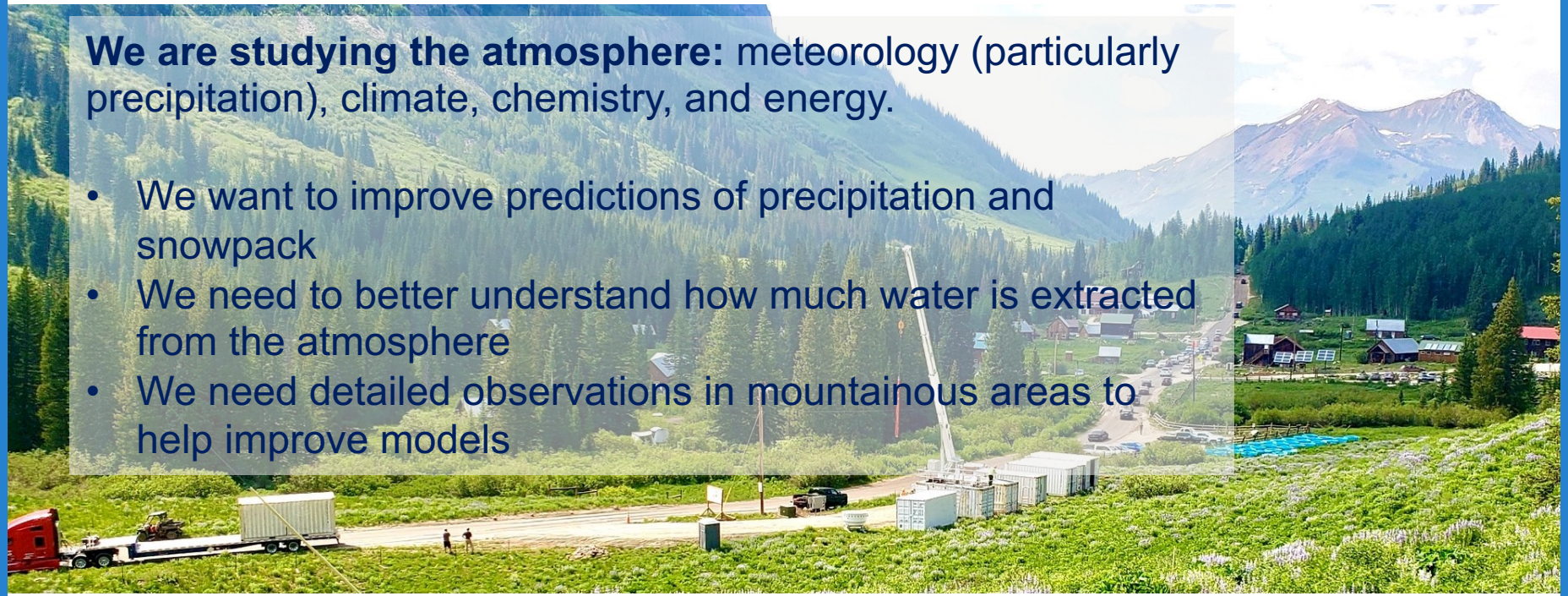
ARM: National Scientific User Facility

Local Partners

DOE National Laboratories do the work

What is going on?

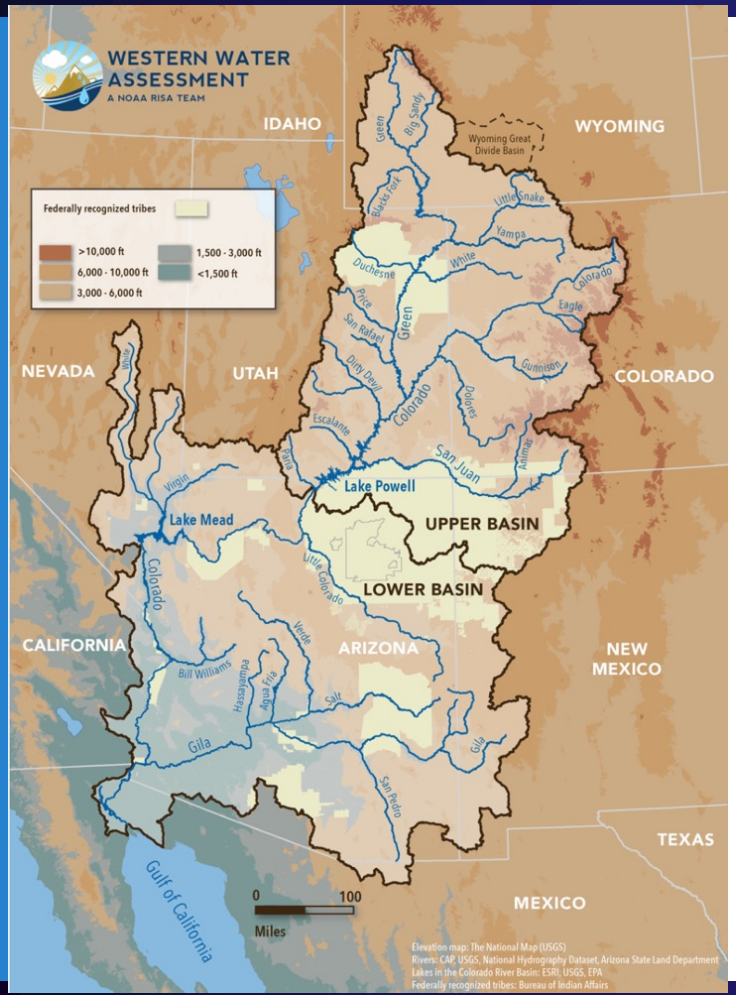
SAIL is a 2-year federal study of the weather and climate in the area



We are studying the atmosphere: meteorology (particularly precipitation), climate, chemistry, and energy.

- We want to improve predictions of precipitation and snowpack
- We need to better understand how much water is extracted from the atmosphere
- We need detailed observations in mountainous areas to help improve models

Why are we doing this?



We need to better understand water in the Colorado River Basin.

- The Colorado River Basin Supports: 40 million people, 1 trillion-dollar economy, rich ecology.
- We lack observations from 'complex terrain' – mountains.
- **Gunnison County** is an ideal location for making detailed observations in very mountainous area.

This area is representative of mountainous areas around the world.

- What we learn here applies to improved modeling of vast regions around the globe.

Observational Gap in the Colorado River Basin

Very few observations of precipitation and snowpack, especially in the mountains at the source.

This makes predictions very difficult. *We need more observations.*

ARM Atmospheric Observatory

- 2 year study: through June 2023
- 2 locations: Gothic (main) & CBMR for radar and air chemistry
- 4 dozen state-of-the-art instruments

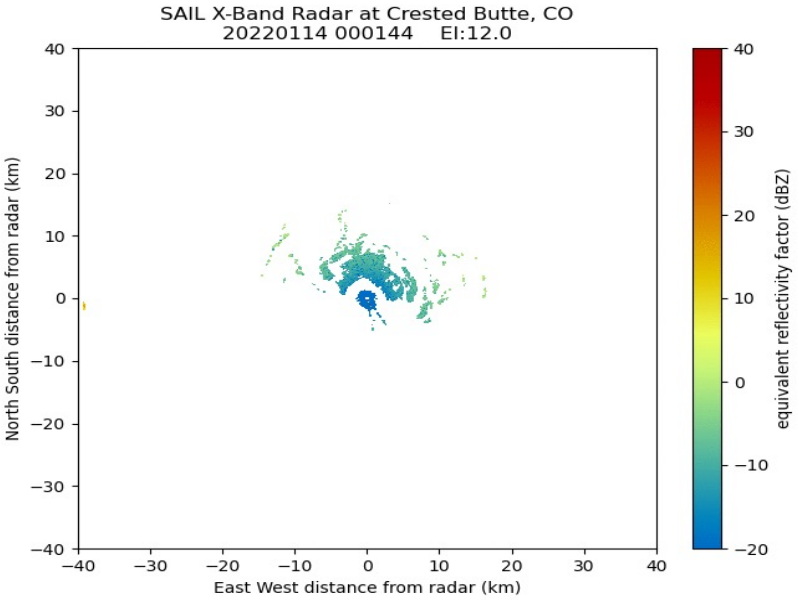
Doppler Radar

Colorado State University

Radars are an important tool. They let us observe a large area and tell us:

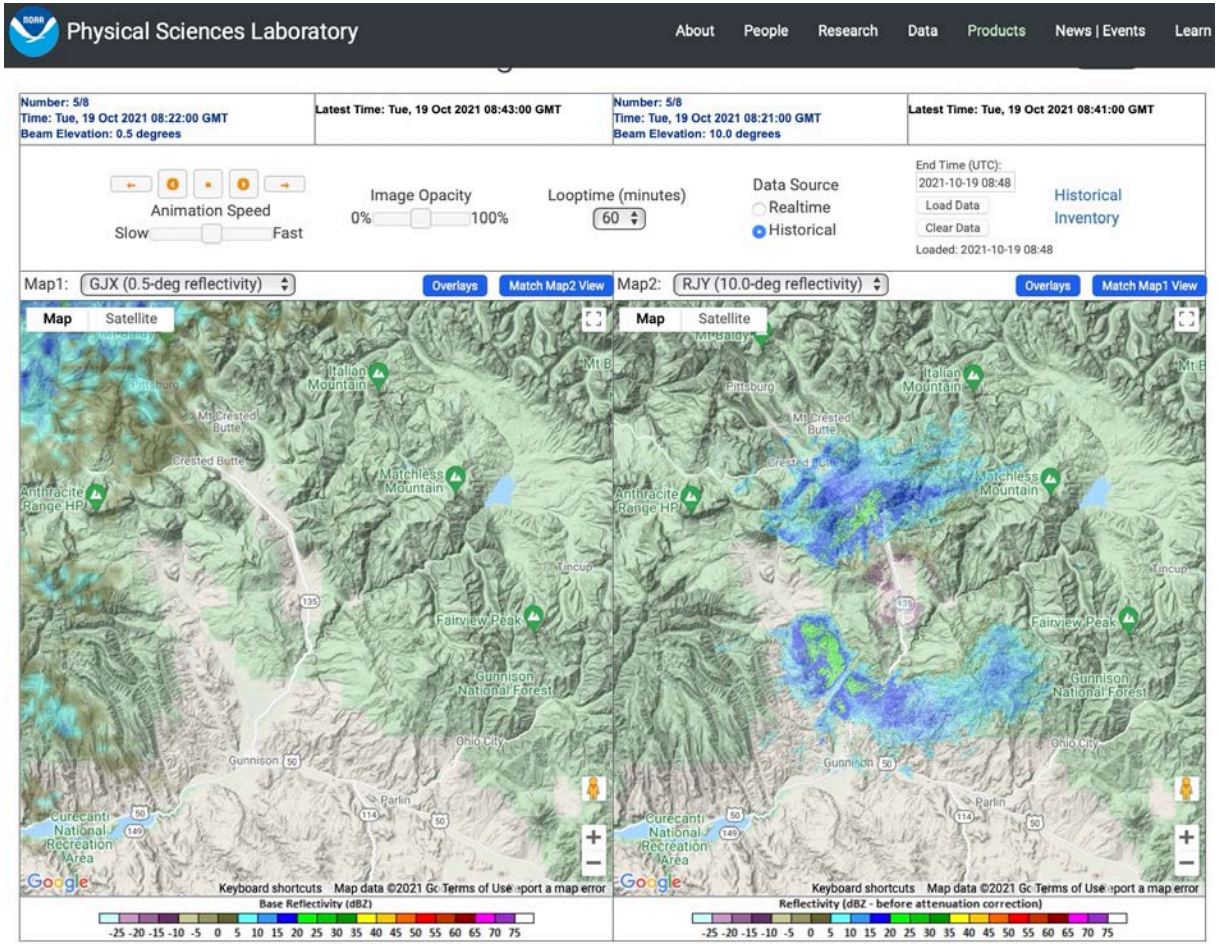
- How much precipitation falls
- What type (rain/snow/hail)
- Where if falls

CSU is a world leader in weather radars



SPLASH: NOAA study to improve weather forecasting

- The SPLASH x-band scanning radar from Colorado State University
- Fills in details in areas blocked by terrain and not visible to the GJX WSR-88D



East River Watershed Study

Major DOE multi-year study

SAIL focuses on the atmosphere/precipitation.

Watershed is an in-depth study of water once it reaches the ground

Ken Williams is a co-investigator for this long-term study in Gunnison County.

BERKELEY LAB

U.S. DEPARTMENT OF ENERGY

Partnerships

Rocky Mountain Biological Laboratory

- Major Partner for Watershed, SAIL, and SPLASH
- Oversee and facilitate a large swath of research in the area
- Vast experience with community engagement and outreach